

What is claimed is:

1. A CDMA (Code Division Multiple Access) transmitter/receiver comprising:

SIR (Signal-to-Interference Ratio) calculating means for calculating SIRs of a received signal slot by slot; and

command generating means for generating, when the SIR decreases or increases, a transmission power control command that causes a station, which is sending the received signal, to lower or raise transmission power or generating, when the SIR continuously decreases over a preselected number of slots, a transmission power control-OFF command for interrupting transmission power control;

wherein said transmission power control command or said transmission power control-OFF command is inserted in a radio frame to be sent to the station.

2. The CDMA transmitter/receiver as claimed in claim 1, wherein said command generating means comprises:

transmission power control command generating means for generating said transmission power control command by determining whether or not a difference between the SIR of a current slot and a reference SIR is equal to or greater than zero;

command select signal generating means for counting slots over which a difference between the SIR of an immediately preceding slot and the SIR of the current slot is equal to or greater than a preselected threshold assigned to SIRs, and generating a command select signal having a particular status in each of a case wherein

said difference is smaller than said preselected threshold assigned to SIRs or a number of slots counted is smaller than a preselected threshold assigned to slots and a case wherein said difference is equal to or greater than said threshold and said number of slots counted is equal to or greater than said threshold assigned to slots; and

a selector for selecting either one of said transmission power control command and said transmission power control-OFF command in accordance with said command select signal.

3. The CDMA transmitter/receiver as claimed in claim 2, wherein said transmission power control-OFF command comprises a transmission power control command for lowering the transmission power and a transmission power control command for raising said transmission power that alternate with each other slot by slot.

4. The CDMA transmitter/receiver as claimed in claim 2, wherein said command select signal generating means comprises:

SIR storing means for storing the SIR of the current slot while outputting the SIR of the immediately preceding slot;

subtracting means for subtracting the SIR of the current slot from the SIR of the immediately preceding slot; and

counter means for counting the number of slots over which a difference output from said subtracting means is equal to or greater than the preselected threshold assigned to SIRs;

wherein said command select signal has a particular status in each of a case wherein the different output from said subtracting

means is smaller than the preselected threshold assigned to SIRs or the number of slots counted is smaller than the preselected threshold assigned to slots and a case wherein said difference output from said subtracting means is equal to or greater than said preselected SIR threshold and said number of slots counted is equal to or greater than said preselected threshold assigned to slots.

5. The CDMA transmitter/receiver as claimed in claim 4, wherein said transmission power control-OFF command comprises a transmission power control command for lowering the transmission power and a transmission power control command for raising said transmission power that alternate with each other slot by slot.

6. The CDMA transmitter/receiver as claimed in claim 1, wherein said command generating means comprises:

transmission power control command generating means for generating said transmission power control command by determining whether or not a difference between the SIR of a current slot and a reference SIR is equal to or greater than zero;

command select signal generating means for counting slots over which a difference between the SIR of the current slot and a reference SIR is equal to or greater than a preselected threshold assigned to SIRs, and generating a command select signal having a particular status in each of a case wherein said difference is smaller than said preselected threshold assigned to SIRs or a number of slots counted is smaller than a preselected threshold assigned to slots and a case wherein said difference is equal to or greater than said threshold

and said number of slots counted is equal to or greater than said preselected threshold; and

a selector for selecting either one of said transmission power control command and said transmission power control-OFF command in accordance with said command select signal.

7. The CDMA transmitter/receiver as claimed in claim 6, wherein said transmission power control-OFF command comprises a transmission power control command for lowering the transmission power and a transmission power control command for raising said transmission power that alternate with each other slot by slot.

8. The CDMA transmitter/receiver as claimed in claim 6, wherein said command select signal generating means comprises:

subtracting means for subtracting the SIR of the current slot from a reference SIR; and

counter means for counting slots over which a difference output from said subtracting means is equal to or greater than the preselected SIR threshold;

wherein said command select signal has a particular status in each of a case wherein the difference output from said subtracting means is smaller than the preselected threshold assigned to SIRs or the number of slots counted is smaller than the preselected threshold assigned to slots and a case wherein said difference output from said subtracting means is equal to or greater than said threshold assigned to SIRs and said number of slots counted is equal to or greater than said preselected threshold assigned to slots.

9. The CDMA transmitter/receiver as claimed in claim 8, wherein said transmission power control-OFF command comprises a transmission power control command for lowering the transmission power and a transmission power control command for raising said transmission power that alternate with each other slot by slot.

10. The CDMA transmitter/receiver as claimed in claim 1, wherein said command generating means comprises:

transmission power control command generating means for generating said transmission power control command by determining whether or not a difference between the SIR of a current slot and a reference SIR is equal to or greater than zero;

command select signal generating means for counting slots over which a difference between the SIR of an immediately preceding slot and the SIR of the current slot is equal to or greater than zero, and generating a command select signal having a particular status in each of a case wherein said difference is smaller than a preselected threshold assigned to SIRs or a number of slots counted is smaller than a preselected threshold assigned to slots and a case wherein said difference is equal to or greater than zero and said number of slots counted is equal to or greater than said preselected threshold assigned to slots; and

a selector for selecting either one of said transmission power control command and said transmission power control-OFF command in accordance with said command select signal.

11. The CDMA transmitter/receiver as claimed in claim 10,

wherein said transmission power control-OFF command comprises a transmission power control command for lowering the transmission power and a transmission power control command for raising said transmission power that alternate with each other slot by slot.

12. The CDMA transmitter/receiver as claimed in claim 11, wherein said command select signal generating means comprising:

SIR storing means for storing the SIR of the current slot while outputting the SIR of the immediately preceding slot;

subtracting means for subtracting the SIR of the current slot from the SIR of the immediately preceding slot; and

counter means for counting the number of slots over which a difference output from said subtracting means is greater than or equal to zero;

wherein said command select signal has a particular status in each of a case wherein the difference output from said subtracting means is smaller than zero or the number of slots counted is smaller than the preselected threshold assigned to slots and a case wherein said difference output from said subtracting means is equal to or greater than zero and said number of slots counted is equal to or greater than said preselected threshold assigned to slots.

13. The CDMA transmitter/receiver as claimed in claim 12, wherein said transmission power control-OFF command comprises a transmission power control command for lowering the transmission power and a transmission power control command for raising said transmission power that alternate with each other slot by slot.

14. The CDMA transmitter/receiver as claimed in claim 1, wherein said transmission power control-OFF command comprises a transmission power control command for lowering the transmission power and a transmission power control command for raising said transmission power that alternate with each other slot by slot.

15. A CDMA transmitter/receiver comprising:

a SIR calculator configured to calculate SIRs of a received signal slot by slot; and

a command generating circuit configured to generate, when the SIR decreases or increases, a transmission power control command that causes a station, which is sending the received signal, to lower or raise transmission power or generate, when the SIR continuously decreases over a preselected number of slots, a transmission power control-OFF command for interrupting transmission power control;

wherein said transmission power control command or said transmission power control-OFF command is inserted in a radio frame to be sent to the station.